



BEST AVAILABLE COPY
#6
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SEQUENCE LISTING

<110> WOLFF, Anne M
APPEL, Karen F
PETERSEN, Jesper F
POULSEN, Ulla
ARNAU, Jose
JACOBSEN, Mette D

<120> MUCOR RECOMBINANT GENE EXPRESSION

<130> WOLFF=3

<140> 10/092,947

<141> 2002-03-08

<150> US 60/274,650

<151> 2001-03-12

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<170> PatentIn version 3.1

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 gtttgagata ttcggtgaaa gaaactatct ccataactga aaaagttaaa ccaaaaagat 180
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 cttgatcttt tttgaattga ataaataaat ttcttgtatt ttaaaatgta acactttaat 360
 gcctaatttc tgcgtgcaat gtcgtttttt tttctgtgat aaccctgaac tgctcaaatg 420
 ctttcatgat gtcattctcat aatctgttgg gttacatcca atactgttaa attgtatgtg 480
 ttgatcttga gtataaggga tcgatcattt gattgtcttt ttctctccta ttttcattaa 540
 a atg atc act gac gaa cat ccg ttt gaa ttt gcg cct cag caa gat gaa 589
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 Tyr Thr Gln Leu Leu Thr Glu Leu His Asn Glu Tyr Cys Ala Glu Gln
 20 25 30
 cca cta gat gtg ctt cag ttc tgc tcc aac ttt ttc att cgc aaa ctc 685
 Pro Leu Asp Val Leu Gln Phe Cys Ser Asn Phe Phe Ile Arg Lys Leu
 35 40 45
 gaa gag cag cgc ttg gag cat aga aac aac cac cat tcc cgtaacaact 734
 Glu Glu Gln Arg Leu Glu His Arg Asn Asn His His Ser
 50 55 60
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 g ccn aat gat acc agt aat gat tta cat cct ttg tgt gag caa cca caa 843
 Pro Asn Asp Thr Ser Asn Asp Leu His Pro Leu Cys Glu Gln Pro Gln
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 Glu Asp Phe Ser Gln Gln Gln Gly Ile Gln Trp Glu Thr Thr His Met
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 ggc cat ccc aac gac cac ggt gct ctt cat gat gat gat gat ccc 939
 Gly His Pro Asn Asp His Gly Ala Leu His Asp Asp Asp Asp Asp Pro
 95 100 105
 ttg gaa gac gaa gac gat gaa gag ttt gac aaa ttt tca act gaa cct 987
 Leu Glu Asp Glu Asp Asp Glu Glu Phe Asp Lys Phe Ser Thr Glu Pro
 110 115 120 125

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Leu Pro Ser Leu Pro Pro Thr Asn Tyr Asn Arg Gly Arg Arg Thr Ser	
130 135 140	
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Val Lys Cys Arg Glu His Gly Thr Gln Arg Gln Pro Arg Leu Cys Gln	
145 150 155	
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Gly His His Pro Gln Ile Ser Gly Thr Ser Glu Arg Ile Lys Val Ser	
160 165 170	
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Ile Ser Asn Asn Phe Leu Phe Arg Asn Leu Asp Glu Glu Gln Tyr Leu	
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Asp Val Val Asn Ala Met Ser Ser Glu Lys Arg Val Val Lys Gly Thr Thr	
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Gly Thr Leu Asp Cys Phe Ile Gly Gln Asn Lys Val Thr Asn Tyr Glu	
225 230 235	
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Ala Gly Gly Ser Phe Gly Glu Leu Ala Leu Met Tyr Asn Ala Pro Arg	
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Arg Asn Thr Ser Ala Pro Ser Leu Met Glu Asn Thr Ser Arg Lys Arg	
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Glu Ser Tyr Glu Gln His Lys Ile Ala Asp Ala Leu Glu Ser Val Tyr	
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Phe Glu Asp Gly Gln Glu Val Val Lys Gln Gly Asp Val Gly Asp Gln	
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Phe Tyr Ile Ile Glu Ser Gly Glu Ala Ile Val Leu Lys Glu Glu Asn	
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 350 355 360 365
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 Glu
 ctg gcc ctg tta aac gat gct cct cga gct gca acc gta gtt gct cac 1811
 Leu Ala Leu Leu Asn Asp Ala Pro Arg Ala Ala Thr Val Val Ala His
 370 375 380
 ggc aga ctc aag tgc gct aca ctg ggc aaa aag gca ttc act cgt ctt 1859
 Gly Arg Leu Lys Cys Ala Thr Leu Gly Lys Lys Ala Phe Thr Arg Leu
 385 390 395
 ctt ggc cct gtt ttg gac atc ttg aag cgt aat tca gaa aac tat cat 1907
 Leu Gly Pro Val Leu Asp Ile Leu Lys Arg Asn Ser Glu Asn Tyr His
 400 405 410
 gct gtc att aac cag caa tca taatcgacc aaaaagttac actagatttc 1958
 Ala Val Ile Asn Gln Gln Ser
 415 420
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 35 40 45

Glu Glu Gln Arg Leu Glu His Arg Asn Asn His His Ser Pro Asn Asp
 50 55 60

Thr Ser Asn Asp Leu His Pro Leu Cys Glu Gln Pro Gln Glu Asp Phe
 65 70 75 80

Ser Gln Gln Gln Gly Ile Gln Trp Glu Thr Thr His Met Gly His Pro
 85 90 95

Asn Asp His Gly Ala Leu His Asp Asp Asp Asp Asp Pro Leu Glu Asp
 100 105 110

Glu Asp Asp Glu Glu Phe Asp Lys Phe Ser Thr Glu Pro Leu Pro Ser
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Leu Pro Pro Thr Asn Tyr Asn Arg Gly Arg Arg Thr Ser Val Lys Cys
 130 135 140

Arg Glu His Gly Thr Gln Arg Gln Pro Arg Leu Cys Gln Gly His His
 145 150 155 160

Pro Gln Ile Ser Gly Thr Ser Glu Arg Ile Lys Val Ser Ile Ser Asn
 165 170 175

Asn Phe Leu Phe Arg Asn Leu Asp Glu Glu Gln Tyr Leu Asp Val Val
 180 185 190

Asn Ala Met Ser Glu Lys Arg Val Val Lys Gly Thr Thr Val Ile Glu
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Gln Gly Ser Val Gly Asp Phe Phe Tyr Val Val Glu Ser Gly Thr Leu
 210 215 220

Asp Cys Phe Ile Gly Gln Asn Lys Val Thr Asn Tyr Glu Ala Gly Gly
 225 230 235 240

Ser Phe Gly Glu Leu Ala Leu Met Tyr Asn Ala Pro Arg Ala Ala Thr
 245 250 255

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 260 265 270

Ser Ala Pro Ser Leu Met Glu Asn Thr Ser Arg Lys Arg Arg Met Tyr
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Glu Tyr Phe Leu Ser Glu Val Val Leu Leu Lys Ser Leu Glu Ser Tyr
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Glu Gln His Lys Ile Ala Asp Ala Leu Glu Ser Val Tyr Phe Glu Asp
 305 310 315 320

Gly Gln Glu Val Val Lys Gln Gly Asp Val Gly Asp Gln Phe Tyr Ile
 325 330 335

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 340 345 350

Gln Gln Val Asn Gln Leu Glu Arg Gly Ser Tyr Phe Gly Glu Leu Ala
 355 360 365

Leu Leu Asn Asp Ala Pro Arg Ala Ala Thr Val Val Ala His Gly Arg
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Leu Lys Cys Ala Thr Leu Gly Lys Lys Ala Phe Thr Arg Leu Leu Gly
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 Ser Pro Ser Ser Gln Thr Xaa Met Asp Asp Phe Glu Ile Lys Gln Pro
 20 25 30
 ata ggt aac aga tgg acg gca tct gca tgt act gtt act gat aga cac 144
 Ile Gly Asn Arg Trp Thr Ala Ser Ala Cys Thr Val Thr Asp Arg His
 35 40 45
 ctg ctt caa ggc tac gga tca tct gcc atg gtt tat agc gca gtg tat 192
 Leu Leu Gln Gly Tyr Gly Ser Ser Ala Met Val Tyr Ser Ala Val Tyr
 50 55 60
 ata cct cac aac aaa cgg gtc gcc atc aag gtg att gat ctg gac atg 240
 Ile Pro His Asn Lys Arg Val Ala Ile Lys Val Ile Asp Leu Asp Met
 65 70 75 80
 ttt gag cgc aac caa ata gac gag ctg agg gta gtacatggca gcacacacta 293
 Phe Glu Arg Asn Gln Ile Asp Glu Leu Arg Val
 85 90
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 Arg Glu Thr Ala Leu Met Ala
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 ctg tcc aag cat cca cat gtg ttg cga gtc tac ggc tca ttt gtc cac 396
 Leu Ser Lys His Pro His Val Leu Arg Val Tyr Gly Ser Phe Val His
 100 105 110

gga tcc aag ctg tac att gtc act cct tat atg gca gta gga tcc tgt 444
 Gly Ser Lys Leu Tyr Ile Val Thr Pro Tyr Met Ala Val Gly Ser Cys
 115 120 125 130

ctc gat atc atg aag ttg agt ttc ccc gac ggc cta gac gag att agc 492
 Leu Asp Ile Met Lys Leu Ser Phe Pro Asp Gly Leu Asp Glu Ile Ser
 135 140 145

att gct act atc cta aaa cag gca ctg gaa gga cta gcc tat ttg cac 540
 Ile Ala Thr Ile Leu Lys Gln Ala Leu Glu Gly Leu Ala Tyr Leu His
 150 155 160

aaa aat ggc cac atc cat cga gac gta aag gca ggc aac ctg ctg atg 588
 Lys Asn Gly His Ile His Arg Asp Val Lys Ala Gly Asn Leu Leu Met
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 35 40 45

Leu Leu Gln Gly Tyr Gly Ser Ser Ala Met Val Tyr Ser Ala Val Tyr
 50 55 60

Ile Pro His Asn Lys Arg Val Ala Ile Lys Val Ile Asp Leu Asp Met
65 70 75 80

Phe Glu Arg Asn Gln Ile Asp Glu Leu Arg Val Arg Glu Thr Ala Leu
85 90 95

Met Ala Leu Ser Lys His Pro His Val Leu Arg Val Tyr Gly Ser Phe
100 105 110

Val His Gly Ser Lys Leu Tyr Ile Val Thr Pro Tyr Met Ala Val Gly
115 120 125

Ser Cys Leu Asp Ile Met Lys Leu Ser Phe Pro Asp Gly Leu Asp Glu
130 135 140

Ile Ser Ile Ala Thr Ile Leu Lys Gln Ala Leu Glu Gly Leu Ala Tyr
145 150 155 160

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 tcc ggc cag ccg ttg acg gat gct cat ttc caa tac ttt gtc tac caa 97
 Ser Gly Gln Pro Leu Thr Asp Ala His Phe Gln Tyr Phe Val Tyr Gln
 20 25 30
 atc tgc aga gga cta aag tac att cac agt gcc aat gtaagcatat 143
 Ile Cys Arg Gly Leu Lys Tyr Ile His Ser Ala Asn
 35 40
 atagacgatt tgacaacatg cgtattaatg tgctttgctc tcaaag gtg ttg cat 198
 Val Leu His
 45
 cga gat ctc aag cca ggt aaa tta cga ata aac ggc ata aca cag atc 246
 Arg Asp Leu Lys Pro Gly Lys Leu Arg Ile Asn Gly Ile Thr Gln Ile
 50 55 60
 acg tcgtgatatt tatcatgtga taatttataa acaggcaacc tccttgtcaa 299
 Thr
 cgctgattgc gaattaaagg taaggaaaca caggggtgcag acaattcgta catgtattaa 359
 atcgagg gaa cca aag att tgt gat ttc ggc ttg gct cgt ggc tat tct 408
 Glu Pro Lys Ile Cys Asp Phe Gly Leu Ala Arg Gly Tyr Ser
 65 70 75
 gag aac gac gaa cac aat gtg ggc ttc atg acc gaa tat gtaagttatc 457

Glu Asn Asp Glu His Asn Val Gly Phe Met Thr Glu Tyr
 80 85 90

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 Val Ala Thr

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 20 25 30

Ile Cys Arg Gly Leu Lys Tyr Ile His Ser Ala Asn Val Leu His Arg
 35 40 45

Asp Leu Lys Pro Gly Lys Leu Arg Ile Asn Gly Ile Thr Gln Ile Thr
 50 55 60

Glu Pro Lys Ile Cys Asp Phe Gly Leu Ala Arg Gly Tyr Ser Glu Asn
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Tyr Arg Ala Pro Glu Ile Met
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Leu Lys Arg Phe Ala Leu Pro Gly Gly Ser Ala Ala Ala Ala Pro Gly
20 25 30
gga cga tcg ccc aac ggc agc ggc gag agc att tcg tgc gtc ttg tgg 144
Gly Arg Ser Pro Asn Gly Ser Gly Glu Ser Ile Ser Cys Val Leu Trp
35 40 45
aac gac ctg ttc ttc atc aca ggc acc gac att gtg cgc tcg ctg acc 192
Asn Asp Leu Phe Phe Ile Thr Gly Thr Asp Ile Val Arg Ser Leu Thr
50 55 60
ttt cgc ttc cat gcg ttt ggc cga ccc gtt acg aac gca aag aag ttt 240
Phe Arg Phe His Ala Phe Gly Arg Pro Val Thr Asn Ala Lys Lys Phe
65 70 75 80
gaa gag ggc ata ttt tct gat ttg cgc aac tta aaa cca ggt cat gat 288
Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Pro Gly His Asp
85 90 95
gct cgg ttg gag gaa ccc aaa tct gaa ttg ctg gac atg ctc tac aag 336
Ala Arg Leu Glu Glu Pro Lys Ser Glu Leu Leu Asp Met Leu Tyr Lys
100 105 110
aac aat tgc atc cgc aca caa aaa aaa caa aaa gta ttt ttc tgg ttt 384
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35 40 45
Asn Asp Leu Phe Phe Ile Thr Gly Thr Asp Ile Val Arg Ser Leu Thr
50 55 60
Phe Arg Phe His Ala Phe Gly Arg Pro Val Thr Asn Ala Lys Lys Phe

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Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Pro Gly His Asp						
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Ala Arg Leu Glu Glu Pro Lys Ser Glu Leu Leu Asp Met Leu Tyr Lys						
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 aacaagatta attctccctc aaaataccca tgaagtgtga gacattgcga aatgttatat 660
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ttgataaaat gaaaaaacta aaaatctcac gaacatggta caaggggaaa ctttgaaatt 240
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ttgccgggca aatcaccttg tgtgcagtga ttagtatatc gaaaggcggg gatatctaga 540
actttgtttg tgtggtaaca ttaaggttta gaagcctttt tttatagcgt cctaccatga 600
cttcatgtgg aggatccaat caagtcttta ttatacctt tgacagggtt aaactaaaaa 660
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Ser Lys Lys Pro Glu Ala Ala Ala Ala Ala Ala Thr Ala Pro Asn Ala
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Val Asn Glu Ser Thr Thr Thr Pro Thr Thr Met Gln Leu Pro Ala Ser
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Tyr Glu Gly Asn Thr Thr Ser Thr Leu Asp Lys Val Asp Asp Gly Ile
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Leu Pro Ser Thr Pro Leu Val Ile Lys Ser Gln Val Ala Ser Gly Ala
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Phe Lys Ala Phe Glu Ile Met Met Ser Ala Ser Ser Pro Lys Trp Met
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Asp Leu Ile Gln Gly Val Pro Gln Val Ile Thr Gln Glu Tyr Leu Ala
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Pro Glu Met Val Met Gln Lys Pro Tyr Gly Met Ala Ala Asp Trp Trp
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His Ser Val Glu Gln Gly Glu Leu Phe Arg Gln Ile Leu Glu Ala Pro
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Ile Lys Phe Pro Ala Gly Gly Cys Ile Thr Glu Glu Ala Lys Asp Phe
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Ile Cys Gln Leu Leu Glu Arg Asp Pro Ala Lys Arg Leu Gly Ser His
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Trp Asp Val Val Tyr Lys Lys Gln Met Gln Leu Pro Phe Val Pro Glu
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Val Glu Glu Gln Leu Arg Glu Glu Ala Ile Ala Ala Ala Ala Ile
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Ser Ile Pro Val Thr Asn Ser Lys Thr Glu Ser Thr Asn Ala Asn Val
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Met Pro Val Ala Asp Gln Ser Lys Phe Lys Gly Phe Ser Tyr Ile Arg
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Met Val Val Gln Val Gly Ile Asn Gly Phe	
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Val Tyr Met Leu Lys Tyr Asp Thr Val His Gly Arg Phe Asp Gly Ser	
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agc agt gat ttc gtg ggt gaa gtt tgg taagaaacgt tattatttca Ser Ser Asp Phe Val Gly Glu Val Trp 285 290	1688
tcgtttgaat agtttactaa cattgaaaat catagt tct tcc gta ttt gac gct Ser Ser Val Phe Asp Ala 295	1742
gct gcc ggt atc caa ttg acc ccc act ttt gtt aag ctt atc gct tgg Ala Ala Gly Ile Gln Leu Thr Pro Thr Phe Val Lys Leu Ile Ala Trp 300 305 310	1790
tat gac aat gag tat ggt tac tct aac cgt gtc gtt gac ctc ctc gtt Tyr Asp Asn Glu Tyr Gly Tyr Ser Asn Arg Val Val Asp Leu Leu Val 315 320 325	1838
cat gcc gct aag gtc gat ggt gct ctc taaatcgtaa atcatttcta His Ala Ala Lys Val Asp Gly Ala Leu 330 335	1885
gtcattgcat ttcatacaca catctgttac ataaataaac ttcattgtaaa aagtcgggtca	1945
taagatcggt ttttggttaat tagcttatat taatttctgt tccaaccctc tgatatgtaa	2005
aatgttgacg aattgcaagt attttgacag gcagaatgac agcatatatatt tgangcctgt	2065
gvacaatctg tgttacataa gattcctggt aaaggatgga tgatattata ttttacagtt	2125

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ataagagccg gtattggcac acgaaggaag ccttgcagcg agaaggacga cgctcttttt 2185
tataggctca tcaactcaatg agagttgcag gaagcactat tttgtaaatg cctgaaatac 2245
agagaccctc tggactatta ttctcaagaa gcactttaac aagaaaaata tagttctttt 2305
gctaatttca agaccttaat catatatnnc gctttcattt ttatttcatg gtttcattca 2365
atttatagat gtattactac actactgatt gctgttactg ttactatcgc cctggccatt 2425
gttggtgttg ttgtcgctgc catcgcatcg ccgttattgt catcgc 2471

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<210> 25
<211> 337
<212> PRT
<213> Mucor circinelloides

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<220>
<221> misc_feature
<222> (2059)..(2059)
<223> n is a, c, g or t

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<220>
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<222> (2333)..(2334)
<223> n is a, c, g or t

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<400> 25

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Met Val Val Gln Val Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg Ile
1           5           10          15

```

```

Val Leu Arg Ala Thr Glu Ser Asn Lys Asp Val Gln Val Val Ala Ile
20          25          30

```

```

Asn Asp Pro Phe Ile Pro Leu Asp Tyr Met Val Tyr Met Leu Lys Tyr
35          40          45

```

```

Asp Thr Val His Gly Arg Phe Asp Gly Ser Val Glu Ala Lys Asp Gly
50          55          60

```

```

Lys Leu Val Val Asn Gly His Ala Ile Ala Val Ser Ala Glu Arg Asp
65          70          75          80

```

```

Pro Thr Ser Ile Pro Trp Gly Ser Ala Gly Ala Asp Tyr Val Val Glu
85          90          95

```

```

Ser Thr Gly Val Phe Thr Thr Thr Glu Ala Ala Ser Ala His Leu Lys
100         105         110

```

Gly Gly Ala Lys Lys Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro
 115 120 125

Met Phe Val Cys Gly Val Asn Leu Glu Ala Tyr Lys Ser Glu Tyr Lys
 130 135 140

Val Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala
 145 150 155 160

Lys Val Ile Asn Asp Asn Phe Gly Ile Ala Asp Gly Leu Met Thr Thr
 165 170 175

Val His Ala Thr Thr Ala Thr Gln Lys Thr Val Asp Gly Pro Ser His
 180 185 190

Lys Asp Trp Arg Gly Gly Arg Ala Ala Ala Ala Asn Ile Ile Pro Ser
 195 200 205

Ser Thr Gly Ala Ala Lys Ala Val Gly Lys Val Ile Pro Ala Leu Asn
 210 215 220

Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Thr Pro Asp Val Ser
 225 230 235 240

Val Val Asp Leu Thr Val Asn Leu Ser Lys Gly Ala Ser Tyr Asp Glu
 245 250 255

Ile Lys Gln Ala Ile Lys Lys Ala Ser Glu Thr Thr Met Lys Gly Val
 260 265 270

Leu Gly Tyr Thr Ser Asp Ala Val Val Ser Ser Asp Phe Val Gly Glu
 275 280 285

Val Trp Ser Ser Val Phe Asp Ala Ala Ala Gly Ile Gln Leu Thr Pro
 290 295 300

Thr Phe Val Lys Leu Ile Ala Trp Tyr Asp Asn Glu Tyr Gly Tyr Ser
 305 310 315 320

Asn Arg Val Val Asp Leu Leu Val His Ala Ala Lys Val Asp Gly Ala
 325 330 335

Leu

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<210> 26
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<220>
<221> misc_feature
<222> (12)..(12)
<223> n is a, c, g or t

<220>
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<222> (15)..(15)
<223> n is a, c, g or t

<220>
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<222> (18)..(18)
<223> n is a, c, g or t

<220>
<221> misc_feature
<222> (21)..(21)
<223> n is a, c, g or t

<220>
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<222> (24)..(24)
<223> n is a, c, g or t

<220>
<221> misc_feature
<222> (27)..(27)
<223> n is a, c, g or t

<400> 26
aarttyttyy tngcnacngc nccngtnaay tgg

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<210> 27
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

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<220>
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 <222> (3)..(3)
 <223> n is a, c, g or t

<220>
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 <222> (6)..(6)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (9)..(9)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (12)..(12)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (18)..(18)
 <223> n is a, c, g or t

<400> 27
 ccnggmng tnaayytnat hgg

23

<210> 28
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<220>
 <221> misc_feature
 <222> (3)..(3)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (9)..(9)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (12)..(12)

<223> n is a, c, g or t

<220>

<221> misc_feature

<222> (15)..(15)

<223> n is a, c, g or t

<220>

<221> misc_feature

<222> (18)..(18)

<223> n is a, c, g or t

<400> 28

ccnccccanc cngcncngt

20

<210> 29

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<220>

<221> misc_feature

<222> (9)..(9)

<223> n is a, c, g or t

<220>

<221> misc_feature

<222> (18)..(18)

<223> n is a, c, g or t

<400> 29

garca y g g n a t h c a r c c n g a y g g

23

<210> 30

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<220>

<221> misc_feature

<222> (4)..(4)

<223> n is a, c, g or t

<220>

<221> misc_feature
 <222> (10)..(10)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (13)..(13)
 <223> n is a, c, g or t

<400> 30
 catnccttcn ccnactacc a 21

<210> 31
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 31
 catccttggt ggactcagta gc 22

<210> 32
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 32
 cttcaggggt agagagagaa gc 22

<210> 33
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 33
 ccttgggggt ttcgagggag g 21

<210> 34
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 34
actgcggagc tcattatgat cactgacgaa catccg

36

<210> 35
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 35
gcgcatgctt atgattgctg gttaatgac

29

<210> 36
<211> 427
<212> PRT
<213> Mucor circinelloides

<400> 36

Met Ile Thr Asp Glu His Pro Phe Glu Phe Ala Pro Gln Gln Asp Glu
1 5 10 15

Tyr Thr Gln Leu Leu Thr Glu Leu His Asn Glu Tyr Cys Ala Glu Gln
20 25 30

Pro Leu Asp Val Leu Gln Phe Cys Ser Asn Phe Phe Ile Arg Lys Leu
35 40 45

Glu Glu Gln Arg Leu Glu His Arg Asn Asn His His Ser Arg Asn Asn
50 55 60

Leu Phe Asp Thr Asn Asp Thr Ser Asn Asp Leu His Pro Leu Cys Glu
65 70 75 80

Gln Pro Gln Glu Asp Phe Ser Gln Gln Gln Gly Ile Gln Trp Glu Thr
85 90 95

Thr His Met Gly His Pro Asn Asp His Gly Ala Leu His Asp Asp Asp
100 105 110

Asp Asp Pro Leu Glu Asp Glu Asp Asp Glu Glu Phe Asp Lys Phe Ser
115 120 125

Thr Glu Pro Leu Pro Ser Leu Pro Pro Thr Asn Tyr Asn Arg Gly Arg
130 135 140

Arg Thr Ser Val Lys Cys Arg Glu His Gly Thr Gln Arg Gln Pro Arg
145 150 155 160

Leu Cys Gln Gly His His Pro Gln Ile Ser Gly Thr Ser Glu Arg Ile
165 170 175

Lys Val Ser Ile Ser Asn Asn Phe Leu Phe Arg Asn Leu Asp Glu Glu
180 185 190

Gln Tyr Leu Asp Val Val Asn Ala Met Ser Glu Lys Arg Val Val Lys
195 200 205

Gly Thr Thr Val Ile Glu Gln Gly Ser Val Gly Asp Phe Phe Tyr Val
210 215 220

Val Glu Ser Gly Thr Leu Asp Cys Phe Ile Gly Gln Asn Lys Val Thr
225 230 235 240

Asn Tyr Glu Ala Gly Gly Ser Phe Gly Glu Leu Ala Leu Met Tyr Asn
245 250 255

Ala Pro Arg Ala Ala Thr Ile Ile Thr Thr Ser Asp Ser Val Leu Trp
260 265 270

Ala Leu Asp Arg Asn Thr Ser Ala Pro Ser Leu Met Glu Asn Thr Ser
275 280 285

Arg Lys Arg Arg Met Tyr Glu Tyr Phe Leu Ser Glu Val Val Leu Leu
290 295 300

Lys Ser Leu Glu Ser Tyr Glu Gln His Lys Ile Ala Asp Ala Leu Glu
305 310 315 320

Ser Val Tyr Phe Glu Asp Gly Gln Glu Val Val Lys Gln Gly Asp Val
325 330 335

Gly Asp Gln Phe Tyr Ile Ile Glu Ser Gly Glu Ala Ile Val Leu Lys
340 345 350

Glu Glu Asn Gly Val Gln Gln Gln Val Asn Gln Leu Glu Arg Gly Ser
355 360 365

Tyr Phe Gly Glu Leu Ala Leu Leu Asn Asp Ala Pro Arg Ala Ala Thr
 370 375 380

Val Val Ala His Gly Arg Leu Lys Cys Ala Thr Leu Gly Lys Lys Ala
 385 390 395 400

Phe Thr Arg Leu Leu Gly Pro Val Leu Asp Ile Leu Lys Arg Asn Ser
 405 410 415

Glu Asn Tyr His Ala Val Ile Asn Gln Gln Ser
 420 425

<210> 37
 <211> 411
 <212> PRT
 <213> Aspergillus niger

<400> 37

Met Ala Glu Ser Ala Phe Pro Ser Ala Gln Gln Pro Leu Arg Val Gly
 1 5 10 15

Thr Lys Asp Asp Lys Ala Ala Ala Phe Gln Lys Ile Ser Glu Glu Asp
 20 25 30

Glu Tyr Glu Val Thr Ser Pro Thr Asp Pro Thr Phe Arg Ser Ala Asn
 35 40 45

Ala Ala Ala Ala Ser Ser Ser Thr Gly Ser Pro Phe Phe Gly Gly Ser
 50 55 60

Tyr Gly Glu Asn Ser Gly Pro Ile Arg Phe Asn Arg Ser Pro Phe Asp
 65 70 75 80

Asn Gly Pro Arg Glu Glu Asp Glu Glu Gly Ala Asp Glu Phe Pro Pro
 85 90 95

Glu Asp Ile Arg Pro Thr Gly Ala Ala Asn Gln Gly Phe Pro Asn Asn
 100 105 110

Tyr Ala Leu Gly Arg Arg Thr Ser Val Ser Ala Glu Ser Leu Asn Pro
 115 120 125

Thr Ser Ala Gly Ser Asp Ser Trp Thr Pro Pro Tyr His Glu Lys Thr
 130 135 140

Glu Glu Gln Leu Ser Arg Leu Lys Thr Ala Val Ser Ser Asn Phe Leu
 145 150 155 160

Phe Ser His Leu Asp Asp Asp Gln Phe Lys Ser Val Leu Asp Ala Leu
 165 170 175

Val Glu Lys Pro Ile Pro Ala Lys Gly Ile Lys Val Ile Ser Gln Gly
 180 185 190

Asp Ala Gly Asp Tyr Phe Tyr Ile Val Glu Asn Gly His Phe Asp Phe
 195 200 205

Met Ile His Pro Ser Gly Ser Val Gln Pro Gly Pro Asp Gly Met Gly
 210 215 220

Asn Lys Val Gly Ser Val Gly Pro Gly Gly Ser Phe Gly Glu Leu Ala
 225 230 235 240

Leu Met Tyr Asn Ala Pro Arg Ala Ala Thr Val Val Ser Val Asp Pro
 245 250 255

Lys Ser Thr Leu Trp Ala Leu Asp Arg Ile Thr Phe Arg Arg Ile Leu
 260 265 270

Met Asp Ser Ala Phe Gln Arg Arg Arg Met Tyr Glu Ala Phe Leu Glu
 275 280 285

Glu Val Pro Leu Leu Ser Ser Leu Lys Pro Tyr Glu Arg Ala Lys Ile
 290 295 300

Ala Asp Ala Leu Asp Ala Ile Lys Tyr Pro Ala Gly Ser Thr Ile Ile
 305 310 315 320

Ala Glu Gly Asp Pro Gly Asp Ala Phe Tyr Leu Leu Glu Ser Gly Glu
 325 330 335

Ala Asp Ala Phe Lys Asn Gly Val Glu Gly Pro Val Lys Ser Tyr Lys
 340 345 350

Arg Gly Asp Tyr Phe Gly Glu Leu Ala Leu Leu Asp Asp Lys Pro Arg
 355 360 365

Ala Ala Ser Ile Val Ala Lys Thr Asp Val Lys Val Ala Lys Leu Gly

370

375

380

Arg Asp Gly Phe Lys Arg Leu Leu Gly Pro Val Glu Asp Ile Met Arg
 385 390 395 400

Arg Ala Glu Tyr Glu Ser Asn Pro Val Pro Ala
 405 410

<210> 38

<211> 403

<212> PRT

<213> Blastocadiella emersonii

<400> 38

Met Ala Asp Tyr Thr Ile Pro Ser Glu Leu Pro Pro Ile Leu Lys Asp
 1 5 10 15

Leu Ser Arg Glu Val Leu Arg His Gln Pro Ala Asp Leu Val Gln Phe
 20 25 30

Cys His Asp Tyr Phe Ala Lys Leu Leu Ala Gln Gln Arg Lys Val Leu
 35 40 45

Met Asp Ser Ala Asp Pro Ala Thr Lys Ala Thr Ile Ala Ser Thr Ala
 50 55 60

Gly Pro Ala Val Asp Ala Asp Glu Ala Ala Arg Ala Asn Ser Tyr Ala
 65 70 75 80

Tyr Ser Thr Asp Asp Gly Phe Gly Thr Glu Asp Asp Asp Asp Asp Asp
 85 90 95

Asp Asp Glu Asp Asp Glu Ala Ala Ile Pro Pro Pro Val Val Asn Arg
 100 105 110

Gly Arg Arg Thr Ser Val Ser Ala Glu Ser Met Ala Pro Thr Ala His
 115 120 125

Asp Val Asp Ala Val Lys Thr Val Ile Pro Lys Ser Asp Glu Gln Arg
 130 135 140

Ala Arg Ile Gln Ala Ser Ile Gly Asn Asn Phe Leu Phe Arg Asn Leu
 145 150 155 160

Asp Glu Asp Gln Tyr Thr Asp Val Val Asn Ala Met Ala Glu Lys Lys
 165 170 175

Val Ala Ala Gly Glu Val Val Ile Arg Gln Gly Gly Val Gly Asp Tyr
 180 185 190

Phe Tyr Val Val Glu Thr Gly Ala Leu Asp Val Phe Val Asn Arg Asn
 195 200 205

Gly Asn Gly Asp Val Lys Val Thr Asp Tyr Ser Ala Gly Gly Ser Phe
 210 215 220

Gly Glu Leu Ala Leu Met Tyr Asn Ala Pro Arg Ala Ala Thr Val Val
 225 230 235 240

Ala Thr Ala Glu Ser Val Leu Trp Ala Leu Asp Arg Val Thr Phe Arg
 245 250 255

Arg Ile Leu Met Asp His Thr Ser Arg Lys Arg Arg Met Tyr Glu Ala
 260 265 270

Phe Leu Glu Glu Val Pro Leu Leu Ser Ser Leu Glu Pro Tyr Glu Arg
 275 280 285

His Lys Ile Ala Asp Ala Leu Glu Ser Val Ala Tyr Ala Asp Gly Asp
 290 295 300

Val Val Ile Arg Gln Gly Asp Val Gly Glu Asn Phe Tyr Ile Ile Glu
 305 310 315 320

Ala Gly Asp Ala Glu Val Ile Lys Ile Asp Glu Asn Gly Glu Glu His
 325 330 335

His Phe Arg Pro Leu His Lys Gly Asn Tyr Phe Gly Glu Leu Ala Leu
 340 345 350

Leu Ser Asp Lys Pro Arg Val Ala Thr Ile Arg Ala Lys Gly Lys Leu
 355 360 365

Lys Cys Ala Lys Leu Gly Lys Lys Ala Phe Thr Arg Leu Leu Gly Pro
 370 375 380

Leu Ala Asp Ile Met Gln Arg Asn Thr Gln Asp Tyr Glu Lys Tyr Pro
 385 390 395 400

Gly Glu His

<210> 39
 <211> 459
 <212> PRT
 <213> Candida albicans

<400> 39

Met Ser Asn Pro Gln Gln Gln Phe Ile Ser Asp Glu Leu Ser Gln Leu
 1 5 10 15

Gln Lys Glu Ile Ile Ser Lys Asn Pro Gln Asp Val Leu Gln Phe Cys
 20 25 30

Ala Asn Tyr Phe Asn Thr Lys Leu Gln Ala Gln Arg Ser Glu Leu Trp
 35 40 45

Ser Gln Gln Ala Lys Ala Glu Ala Ala Gly Ile Asp Leu Phe Pro Ser
 50 55 60

Val Asp His Val Asn Val Asn Ser Ser Gly Val Ser Ile Val Asn Asp
 65 70 75 80

Arg Gln Pro Ser Phe Lys Ser Pro Phe Gly Val Asn Asp Pro His Ser
 85 90 95

Asn His Asp Glu Asp Pro His Ala Lys Asp Thr Lys Thr Asp Thr Ala
 100 105 110

Ala Ala Ala Val Gly Gly Gly Ile Phe Lys Ser Asn Phe Asp Val Lys
 115 120 125

Lys Ser Ala Ser Asn Pro Pro Thr Lys Glu Val Asp Pro Asp Asp Pro
 130 135 140

Ser Lys Pro Ser Ser Ser Ser Gln Pro Asn Gln Gln Ser Ala Ser Ala
 145 150 155 160

Ser Ser Lys Thr Pro Ser Ser Lys Ile Pro Val Ala Phe Asn Ala Asn
 165 170 175

Arg Arg Thr Ser Val Ser Ala Glu Ala Leu Asn Pro Ala Lys Leu Lys

180					185					190					
Leu	Asp	Ser	Trp	Lys	Pro	Pro	Val	Asn	Asn	Leu	Ser	Ile	Thr	Glu	Glu
	195						200					205			
Glu	Thr	Leu	Ala	Asn	Asn	Leu	Lys	Asn	Asn	Phe	Leu	Phe	Lys	Gln	Leu
	210					215					220				
Asp	Ala	Asn	Ser	Lys	Lys	Thr	Val	Ile	Ala	Ala	Leu	Gln	Gln	Lys	Ser
225						230					235				240
Phe	Ala	Lys	Asp	Thr	Val	Ile	Ile	Gln	Gln	Gly	Asp	Glu	Gly	Asp	Phe
				245					250					255	
Phe	Tyr	Ile	Ile	Glu	Thr	Gly	Thr	Val	Asp	Phe	Tyr	Val	Asn	Asp	Ala
			260					265					270		
Lys	Val	Ser	Ser	Ser	Ser	Glu	Gly	Ser	Ser	Phe	Gly	Glu	Leu	Ala	Leu
		275					280					285			
Met	Tyr	Asn	Ser	Pro	Arg	Ala	Ala	Thr	Ala	Val	Ala	Ala	Thr	Asp	Val
	290					295					300				
Val	Cys	Trp	Ala	Leu	Asp	Arg	Leu	Thr	Phe	Arg	Arg	Ile	Leu	Leu	Glu
305						310					315				320
Gly	Thr	Phe	Asn	Lys	Arg	Leu	Met	Tyr	Glu	Asp	Phe	Leu	Lys	Asp	Ile
				325					330					335	
Glu	Val	Leu	Lys	Ser	Leu	Ser	Asp	His	Ala	Arg	Ser	Lys	Leu	Ala	Asp
			340					345					350		
Ala	Leu	Ser	Thr	Glu	Met	Tyr	His	Lys	Gly	Asp	Lys	Ile	Val	Thr	Glu
			355				360					365			
Gly	Glu	Gln	Gly	Glu	Asn	Phe	Tyr	Leu	Ile	Glu	Ser	Gly	Asn	Cys	Gln
	370					375					380				
Val	Tyr	Asn	Glu	Lys	Leu	Gly	Asn	Ile	Lys	Gln	Leu	Thr	Lys	Gly	Asp
385						390					395				400
Tyr	Phe	Gly	Glu	Leu	Ala	Leu	Ile	Lys	Asp	Leu	Pro	Arg	Gln	Ala	Thr
				405					410					415	

Val Glu Ala Leu Asp Asn Val Ile Val Ala Thr Leu Gly Lys Ser Gly
 420 425 430

Phe Gln Arg Leu Leu Gly Pro Val Val Glu Val Leu Lys Glu Gln Asp
 435 440 445

Pro Thr Lys Ser Gln Asp Pro Thr Ala Gly His
 450 455

<210> 40
 <211> 415
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 40

Val Ser Ser Leu Pro Lys Glu Ser Gln Ala Glu Leu Gln Leu Phe Gln
 1 5 10 15

Asn Glu Ile Asn Ala Ala Asn Pro Ser Asp Phe Leu Gln Phe Ser Ala
 20 25 30

Asn Tyr Phe Asn Lys Arg Leu Glu Gln Gln Arg Ala Phe Leu Lys Ala
 35 40 45

Arg Glu Pro Glu Phe Lys Ala Lys Asn Ile Val Leu Phe Pro Glu Pro
 50 55 60

Glu Glu Ser Phe Ser Arg Pro Gln Ser Ala Gln Ser Gln Ser Arg Ser
 65 70 75 80

Arg Ser Ser Val Met Phe Lys Ser Pro Phe Val Asn Glu Asp Pro His
 85 90 95

Ser Asn Val Phe Lys Ser Gly Phe Asn Leu Asp Pro His Glu Gln Asp
 100 105 110

Thr His Gln Gln Ala Gln Glu Glu Gln Gln His Thr Arg Glu Lys Thr
 115 120 125

Ser Thr Pro Pro Leu Pro Met His Phe Asn Ala Gln Arg Arg Thr Ser
 130 135 140

Val Ser Gly Glu Thr Leu Gln Pro Asn Asn Phe Asp Asp Trp Thr Pro
 145 150 155 160

Asp His Tyr Lys Glu Lys Ser Glu Gln Gln Leu Gln Arg Leu Glu Lys
 165 170 175

Ser Ile Arg Asn Asn Phe Leu Phe Asn Lys Leu Asp Ser Asp Ser Lys
 180 185 190

Arg Leu Val Ile Asn Cys Leu Glu Glu Lys Ser Val Pro Lys Gly Ala
 195 200 205

Thr Ile Ile Lys Gln Gly Asp Gln Gly Asp Tyr Phe Tyr Val Val Glu
 210 215 220

Lys Gly Thr Val Asp Phe Tyr Val Asn Asp Asn Lys Val Asn Ser Ser
 225 230 235 240

Gly Pro Gly Ser Ser Phe Gly Glu Leu Ala Leu Met Tyr Asn Ser Pro
 245 250 255

Arg Ala Ala Thr Val Val Ala Thr Ser Asp Cys Leu Leu Trp Ala Leu
 260 265 270

Asp Arg Leu Thr Phe Arg Lys Ile Leu Leu Gly Ser Ser Phe Lys Lys
 275 280 285

Arg Leu Met Tyr Asp Asp Leu Leu Lys Ser Met Pro Val Leu Lys Ser
 290 295 300

Leu Thr Thr Tyr Asp Arg Ala Lys Leu Ala Asp Ala Leu Asp Thr Lys
 305 310 315 320

Ile Tyr Gln Pro Gly Glu Thr Ile Ile Arg Glu Gly Asp Gln Gly Glu
 325 330 335

Asn Phe Tyr Leu Ile Glu Tyr Gly Ala Val Asp Val Ser Lys Lys Gly
 340 345 350

Gln Gly Val Ile Asn Lys Leu Lys Asp His Asp Tyr Phe Gly Glu Val
 355 360 365

Ala Leu Leu Asn Asp Leu Pro Arg Gln Ala Thr Val Thr Ala Thr Lys
 370 375 380

Arg Thr Lys Val Ala Thr Leu Gly Lys Ser Gly Phe Gln Arg Leu Leu
385 390 395 400

Gly Pro Ala Val Asp Val Leu Lys Leu Asn Asp Pro Thr Arg His
405 410 415

<210> 41
<211> 412
<212> PRT
<213> Schizosaccharomyces pombe

<400> 41

Met Ser Phe Glu Glu Val Tyr Glu Glu Leu Lys Ala Leu Val Asp Glu
1 5 10 15

Gln Asn Pro Ser Asp Val Leu Gln Phe Cys Tyr Asp Phe Phe Gly Glu
20 25 30

Lys Leu Lys Ala Glu Arg Ser Val Phe Arg Arg Gly Asp Thr Ile Thr
35 40 45

Glu Ser Phe Ser Asp Gly Asp Glu Ser Asp Phe Leu Ser Glu Leu Asn
50 55 60

Asp Met Val Ala Gly Pro Glu Ala Ile Gly Pro Asp Ala Lys Tyr Val
65 70 75 80

Pro Glu Leu Gly Gly Leu Lys Glu Met Asn Val Ser Tyr Pro Gln Asn
85 90 95

Tyr Asn Leu Leu Arg Arg Gln Ser Val Ser Thr Glu Ser Met Asn Pro
100 105 110

Ser Ala Phe Ala Leu Glu Thr Lys Arg Thr Phe Pro Pro Lys Asp Pro
115 120 125

Glu Asp Leu Lys Arg Leu Lys Arg Ser Val Ala Gly Asn Phe Leu Phe
130 135 140

Lys Asn Leu Asp Glu Glu His Tyr Asn Glu Val Leu Asn Ala Met Thr
145 150 155 160

Glu Lys Arg Ile Gly Glu Ala Gly Val Ala Val Ile Val Gln Gly Ala
165 170 175

Val Gly Asp Tyr Phe Tyr Ile Val Glu Gln Gly Glu Phe Asp Val Tyr
 180 185 190

Lys Arg Pro Glu Leu Asn Ile Thr Pro Glu Glu Val Leu Ser Ser Gly
 195 200 205

Tyr Gly Asn Tyr Ile Thr Thr Ile Ser Pro Gly Glu Tyr Phe Gly Glu
 210 215 220

Leu Ala Leu Met Tyr Asn Ala Pro Arg Ala Ala Ser Val Val Ser Lys
 225 230 235 240

Thr Pro Asn Asn Val Ile Tyr Ala Leu Asp Arg Thr Ser Phe Arg Arg
 245 250 255

Ile Val Phe Glu Asn Ala Tyr Arg Gln Arg Met Leu Tyr Glu Ser Leu
 260 265 270

Leu Glu Glu Val Pro Ile Leu Ser Ser Leu Asp Lys Tyr Gln Arg Gln
 275 280 285

Lys Ile Ala Asp Ala Leu Gln Thr Val Val Tyr Gln Ala Gly Ser Ile
 290 295 300

Val Ile Arg Gln Gly Asp Ile Gly Asn Gln Phe Tyr Leu Ile Glu Asp
 305 310 315 320

Gly Glu Ala Glu Val Val Lys Asn Gly Lys Gly Val Val Val Thr Leu
 325 330 335

Thr Lys Gly Asp Tyr Phe Gly Glu Leu Ala Leu Ile His Glu Thr Val
 340 345 350

Arg Asn Ala Thr Val Gln Ala Lys Thr Arg Leu Lys Leu Ala Thr Phe
 355 360 365

Asp Lys Pro Thr Phe Asn Arg Leu Leu Gly Asn Ala Ile Asp Leu Met
 370 375 380

Arg Asn Gln Pro Arg Ala Arg Met Gly Met Asp Asn Glu Tyr Gly Asp
 385 390 395 400

Gln Ser Leu His Arg Ser Pro Pro Ser Thr Lys Ala

405

410

<210> 42
 <211> 240
 <212> PRT
 <213> Mucor rouxii

<400> 42

Met Asp Glu Glu His Tyr Gln Asp Ile Val Asn Ala Met Ile Glu Lys
 1 5 10 15

Pro Val Arg Lys Gly Glu Thr Ile Ile Glu Gln Gly Ala Val Gly Asp
 20 25 30

Tyr Phe Tyr Val Val Ala Ser Gly Thr Phe Asp Cys Tyr Ile Lys Lys
 35 40 45

Pro Gly Gln Glu Lys Pro Leu Lys Val Thr Ser Tyr Glu Arg Gly Gly
 50 55 60

Ser Phe Gly Glu Leu Ala Leu Met Tyr Asn Ala Pro Arg Ala Ala Thr
 65 70 75 80

Val Thr Ser Thr Ser Glu Ser Val Leu Trp Ala Leu Asp Arg Val Thr
 85 90 95

Phe Arg Thr Ile Leu Met Glu Asn Thr Ala Leu Lys Arg Arg Val Tyr
 100 105 110

Glu Ser Phe Leu Glu Glu Val Ala Leu Leu Ile Ser Leu Glu Pro Tyr
 115 120 125

Glu Arg His Lys Ile Ala Asp Ser Leu Glu Thr Ile Phe Phe Asn Asp
 130 135 140

Asn Gly His Val Ile Ser Gln Gly Asp Ile Gly Asp Gln Phe Tyr Ile
 145 150 155 160

Ile Glu Ser Gly Ser Ala Ile Val Tyr Lys Thr Asp Ser Asn Gly Asp
 165 170 175

Gln Gln Met Val Asn Gln Leu Glu Arg Gly Ala Tyr Phe Gly Glu Leu
 180 185 190

Ala Leu Leu Asn Asp Cys Pro Arg Ala Ala Thr Val Ile Ala Lys Gly
 195 200 205

Thr Leu Arg Cys Val Thr Leu Gly Lys Lys Ala Phe Thr Arg Leu Leu
 210 215 220

Gly Pro Val His Glu Ile Leu Lys Arg Asn Ala Glu Asn Tyr Gln Ala
 225 230 235 240

Ile Leu Ser Gln Gln Gln Gln Tyr
 245

<210> 43

<211> 605

<212> PRT

<213> Mucor circinelloides

<400> 43

Met Ala Asp Phe Thr Asp Ser Leu Ile Lys Asn Ile Gly Val His Ser
 1 5 10 15

Ser Ser Pro Val Met Thr Ser Val Asn Met Gly Gln Leu Gly Glu Lys
 20 25 30

Leu Arg Gln Ala Arg Thr Thr Thr Leu Ala Ser Leu Ser Gln Ala Leu
 35 40 45

Ser Lys Lys Pro Glu Ala Ala Ala Ala Ala Thr Ala Pro Asn Ala
 50 55 60

Val Asn Glu Ser Thr Thr Thr Pro Thr Thr Met Gln Leu Pro Ala Ser
 65 70 75 80

Glu Lys Ala Thr Ser Gln Leu Glu Ile Asn Val Val Glu Ala Arg Asn
 85 90 95

Leu Thr Ile Ala Asp Ala Arg Lys Ala Asp Thr Tyr Cys Ile Val His
 100 105 110

Tyr Glu Gly Asn Thr Thr Ser Thr Leu Asp Lys Val Asp Asp Gly Ile
 115 120 125

Leu Pro Ser Thr Pro Leu Val Ile Lys Ser Gln Val Ala Ser Gly Ala
 130 135 140

Phe Lys Ala Phe Glu Ile Met Met Ser Ala Ser Ser Pro Lys Trp Met
 145 150 155 160

His Arg Val Asn Phe Asp Val Thr Ala Gly Asn Lys Glu Ile Thr Val
 165 170 175

Ser Val Tyr Asp Arg Gly Asn Lys Leu Pro Asn Gly Glu Asp Arg Phe
 180 185 190

Leu Gly Met Ser Ser Ile Val Pro Asn Leu Val Asn Lys Lys Thr Val
 195 200 205

Glu Leu Ile Phe Pro Leu His Gly Arg Pro Asp Asp Asp Gln Glu Val
 210 215 220

Thr Gly Asp Val Arg Leu Gln Val Thr Phe Ile Asp Pro Lys Lys Ala
 225 230 235 240

Asn Leu Lys Pro Glu Asp Phe Arg Ile Val Arg Met Ile Gly Gln Gly
 245 250 255

Ser Val Gly Lys Val Tyr Glu Val Ile Lys Arg Asp Ser Gly Arg Thr
 260 265 270

Tyr Ala Met Lys Val Leu Ser Lys Arg Leu Leu Leu Ala Glu Asn Glu
 275 280 285

Val Asp Thr Ala Phe Asn Glu Arg Asn Val Leu Val Gln Ser Leu Ser
 290 295 300

Ser Pro Phe Ile Ala Asn Leu Lys Tyr Ser Phe Gln Thr Thr Asn His
 305 310 315 320

Leu Phe Leu Val Met Asp Tyr Phe Pro Gly Gly Glu Leu Phe Asp Phe
 325 330 335

Leu Glu Arg Glu Arg Cys Leu Ser Glu Lys Arg Cys Gln Phe Phe Ala
 340 345 350

Ala Glu Ile Val Cys Ala Phe Asp Asn Ile His Ala Arg Asn Ile Val
 355 360 365

Tyr Arg Asn Leu Lys Pro Glu Ser Ile Leu Leu Asp Ala His Gly His
 370 375 380

Ile Ala Leu Thr Asp Phe Gly Leu Cys Lys Gln Leu Lys Asn Lys Met

385		390		395		400									
Asp	Leu	Ile	Gln	Gly	Val	Pro	Gln	Val	Ile	Thr	Gln	Glu	Tyr	Leu	Ala
			405						410					415	
Pro	Glu	Met	Val	Met	Gln	Lys	Pro	Tyr	Gly	Met	Ala	Ala	Asp	Trp	Trp
			420					425					430		
Ser	Leu	Gly	Val	Leu	Met	Phe	Glu	Leu	Leu	Thr	Gly	Ser	Pro	Pro	Phe
		435					440					445			
His	Ser	Val	Glu	Gln	Gly	Glu	Leu	Phe	Arg	Gln	Ile	Leu	Glu	Ala	Pro
	450					455					460				
Ile	Lys	Phe	Pro	Ala	Gly	Gly	Cys	Ile	Thr	Glu	Glu	Ala	Lys	Asp	Phe
465					470					475					480
Ile	Cys	Gln	Leu	Leu	Glu	Arg	Asp	Pro	Ala	Lys	Arg	Leu	Gly	Ser	His
			485					490						495	
Gly	Asp	Val	Ala	Gln	Val	Lys	Ala	His	Pro	Phe	Phe	Lys	Asp	Leu	Asn
			500					505					510		
Trp	Asp	Val	Val	Tyr	Lys	Lys	Gln	Met	Gln	Leu	Pro	Phe	Val	Pro	Glu
		515					520					525			
Val	Glu	Glu	Gln	Leu	Arg	Glu	Glu	Ala	Ile	Ala	Ala	Ala	Ala	Ala	Ile
	530					535				540					
Ser	Ile	Pro	Val	Thr	Asn	Ser	Lys	Thr	Glu	Ser	Thr	Asn	Ala	Asn	Val
545					550				555					560	
Met	Pro	Val	Ala	Asp	Gln	Ser	Lys	Phe	Lys	Gly	Phe	Ser	Tyr	Ile	Arg
			565					570						575	
Glu	Asp	Val	Met	Ala	Lys	Lys	Gly	Glu	His	Arg	Leu	Gly	Val	Asn	Pro
			580					585					590		
Glu	Asp	Glu	Asp	Pro	Glu	Val	Asp	Phe	Trp	Phe	Arg	Gln			
		595				600						605			

<210> 44
 <211> 480
 <212> PRT

<213> *Aspergillus niger*

<400> 44

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Met Pro Ser Leu Gly Gly Leu Leu Lys Lys Arg Arg Thr Lys Asp Ser
1          5          10          15

Gln Thr Leu Ser Lys Glu Leu Glu Ala Gly Ser Ala Gln Thr Gln Thr
20          25          30

Ser Pro Asn Ala Ala Glu Asp His His Asn His Asn His His Gln His
35          40          45

His His His Leu Phe His His His His Gln Pro Gln Pro Ala Thr Asn
50          55          60

Ser Gly Ser Ala Ala Asn Thr Pro Pro Gln Pro Gln Asp Ser Val Pro
65          70          75          80

Gln Gln Ser Asn Arg Ser Ser Gly Ala Glu Lys Ser Ser Asp Gly Gln
85          90          95

Val Ala Ser Met Gln Ser Ala Val Thr Gln Ala Ser Pro Ser Ala His
100         105         110

His Thr Ser Gly Leu Pro Gln Pro Asn Ala Asn Ala Ala Ser Ile Gln
115         120         125

Asn Ile Ile Asn Pro Ser Gln Gln Gly Ala Met His Ser Ala Ser Ser
130         135         140

Gly His Thr Gln Ser His His Ala Gly Arg Ser Asp Ala Arg Thr Thr
145         150         155         160

Lys Gly Lys Tyr Ser Leu Asp Asp Phe Ser Leu Gln Arg Thr Leu Gly
165         170         175

Thr Gly Ser Phe Gly Arg Val His Leu Val Gln Ser Lys His Asn His
180         185         190

Arg Phe Tyr Ala Val Lys Val Leu Lys Lys Ala Gln Val Val Lys Met
195         200         205

Lys Gln Ile Glu His Thr Asn Asp Glu Arg Arg Met Leu Asn Arg Val
210         215         220

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Arg His Pro Phe Leu Ile Thr Leu Trp Gly Thr Trp Gln Asp Ser Arg
225 230 235 240

Asn Leu Tyr Met Val Met Asp Phe Val Glu Gly Gly Glu Leu Phe Ser
245 250 255

Leu Val Arg Lys Ser Gln Arg Phe Pro Asn Pro Val Ala Lys Phe Tyr
260 265 270

Ala Ala Glu Val Thr Leu Ala Leu Glu Tyr Leu His Thr Gln Asn Ile
275 280 285

Ile Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Leu Asp Arg His Gly
290 295 300

His Leu Lys Ile Thr Asp Phe Gly Phe Ala Lys Glu Val Pro Asp Ile
305 310 315 320

Thr Trp Thr Leu Cys Gly Thr Pro Asp Tyr Leu Ala Pro Glu Val Val
325 330 335

Ser Ser Lys Gly Tyr Asn Lys Ser Val Asp Trp Trp Ser Leu Gly Ile
340 345 350

Leu Ile Phe Glu Met Leu Cys Gly Phe Thr Pro Phe Trp Asp Ser Gly
355 360 365

Ser Pro Val Lys Ile Tyr Glu Asn Ile Leu Arg Gly Arg Val Lys Tyr
370 375 380

Pro Pro Tyr Leu His Pro Asp Ala Val Asp Leu Leu Ser Gln Leu Ile
385 390 395 400

Thr Ala Asp Leu Thr Lys Arg Leu Gly Asn Leu His Gly Gly Ser Asp
405 410 415

Asp Val Lys Asn His Pro Trp Phe Ala Glu Val Thr Trp Asp Arg Leu
420 425 430

Ala Arg Lys Asp Ile Asp Ala Pro Tyr Val Pro Pro Ile Arg Gly Gly
435 440 445

Gln Gly Asp Ala Ser Gln Tyr Asp Arg Tyr Pro Glu Glu Thr Glu Gln
 450 455 460

Tyr Gly Met Ala Gly Glu Asp Pro His Gly His Leu Phe Pro Asp Phe
 465 470 475 480

<210> 45
 <211> 425
 <212> PRT
 <213> Blastocadiella emersonii

<400> 45

Met Thr Leu Ile Asp Lys Leu Met Glu Lys Thr Lys Lys Val Val Gly
 1 5 10 15

Ser Ser Asp Lys Asp Ala Pro Ala Pro Ala Ser Pro Ser Ser Pro Ser
 20 25 30

Thr Ala Ala Gly Ala Gly Ser Ala Ser Ser Thr Ala Ser Ser Thr Thr
 35 40 45

Thr Ala Ala Ala Ser Gly Asn Leu Ser Ile Pro Ser Pro Leu Val Ala
 50 55 60

Gly Ser Thr Thr Ser Ser Ser Ile Ser His Ala Gln Lys Met Ala Thr
 65 70 75 80

Ala Ala His Thr Asn Ser Asp Tyr Ser Pro Ser Pro Ala Ala Thr Pro
 85 90 95

Ser Ala Pro Leu Asp Ala Val Ala Glu Arg Arg Arg Arg Lys Thr Thr
 100 105 110

Leu Ala Asp Leu Glu Leu Arg Gln Thr Leu Gly Thr Gly Ser Phe Gly
 115 120 125

Arg Val His Leu Val Arg Leu Arg Ser Thr Gly Lys Tyr Tyr Ala Met
 130 135 140

Lys Val Leu Lys Lys Ala Glu Val Val Lys His Lys Gln Val Glu His
 145 150 155 160

Thr Leu Asn Glu Lys Gly Ile Leu Glu Gln Ile Asp His Pro Phe Leu
 165 170 175

Val Ala Leu His Ser Ser Phe Gln Asp Ser Ala Asn Leu Tyr Met Val
 180 185 190

Met Glu Tyr Val Thr Gly Gly Glu Leu Phe Thr Tyr Leu Arg Arg Ser
 195 200 205

Gln Arg Phe Ser Asn Asn Val Ala Lys Phe Tyr Ala Ala Glu Val Val
 210 215 220

Leu Ala Phe Glu Tyr Leu His Ser Lys Asp Ile Ile Tyr Arg Asp Leu
 225 230 235 240

Lys Pro Glu Asn Leu Leu Leu Asp Ala Gln Gly His Val Lys Ile Thr
 245 250 255

Asp Phe Gly Phe Ala Lys His Val Pro Asp Ile Thr Trp Thr Leu Cys
 260 265 270

Gly Thr Pro Asp Tyr Leu Ala Pro Glu Ile Ile Gln Ser Arg Gly Tyr
 275 280 285

Gly Arg Ala Val Asp Trp Tyr Ala Leu Gly Val Leu Ile Phe Glu Met
 290 295 300

Leu Ala Gly Tyr Pro Pro Phe Tyr Asp Glu Asp His Val Arg Met Tyr
 305 310 315 320

Glu Lys Ile Leu Gln Gly Lys Val Lys Trp Pro Ser His Phe Asp Pro
 325 330 335

Ala Ala Lys Asp Leu Leu Lys Arg Leu Leu Thr Thr Asp Leu Thr Lys
 340 345 350

Arg Tyr Gly Asn Leu Lys Gly Gly Ser Lys Asp Ile Lys Met His Lys
 355 360 365

Trp Phe Ala Gly Leu Asp Trp Thr Lys Leu Phe Asn Lys Gln Ile Pro
 370 375 380

Pro Pro Tyr Thr Pro Pro Asn Arg Gly Asp Gly Asp Thr Ser Asn Phe
 385 390 395 400

Asp Ala Tyr Pro Glu Glu Thr Glu Pro Tyr Gly Lys Val Gln Pro Asp

405

410

415

Pro Tyr Ala Gln Leu Phe Lys Asp Phe
 420 425

<210> 46
 <211> 442
 <212> PRT
 <213> Candida albicans

<400> 46

Met Val Asn Leu Leu Lys Lys Leu His Ile Thr Lys Ser His Gln Ser
 1 5 10 15

Asn His Ser Asn Ser Asp Ser Asn Ser Leu Asn Ser Asn Thr Ser Met
 20 25 30

Asp Asn His Gln Gln Gln Gln Gln Leu Gln Gln Tyr Gln Gln Gln Phe
 35 40 45

Gln Gln Pro Gln Gln Gln Leu Tyr Pro Gly Glu Gln Ile Val His Pro
 50 55 60

Ala Ala Ala Gln Thr Gly Gln Asn Thr Thr Asn Val Thr Ala Val Ser
 65 70 75 80

Ser Ser Asn Ile Thr Gln Ser Ala Thr Ser Ser Leu His Ser Gln Gln
 85 90 95

Leu Gln His Val Asp Val Ser Lys Ser Ala Ala Glu Glu Ala Ile Arg
 100 105 110

Arg Ser Leu Leu Pro Glu Arg Ser Thr Val Ser Lys Gly Lys Tyr Ser
 115 120 125

Leu Thr Asp Phe Ser Ile Met Arg Thr Leu Gly Thr Gly Ser Phe Gly
 130 135 140

Arg Val His Leu Val Arg Ser Val His Asn Gly Arg Tyr Tyr Ala Ile
 145 150 155 160

Lys Val Leu Lys Lys His Gln Val Val Lys Met Lys Gln Val Glu His
 165 170 175

Thr Asn Asp Glu Arg Arg Met Leu Lys Leu Val Glu His Pro Phe Leu
 180 185 190

Ile Arg Met Trp Gly Thr Phe Gln Asp Ser Lys Asn Leu Phe Met Val
 195 200 205

Met Asp Tyr Ile Glu Gly Gly Glu Leu Phe Ser Leu Leu Arg Lys Ser
 210 215 220

Gln Arg Phe Pro Asn Pro Val Ala Lys Phe Tyr Ala Ala Glu Val Thr
 225 230 235 240

Leu Ala Leu Glu Tyr Leu His Ser His Asp Ile Ile Tyr Arg Asp Leu
 245 250 255

Lys Pro Glu Asn Ile Leu Leu Asp Arg Asn Gly His Ile Lys Ile Thr
 260 265 270

Asp Phe Gly Phe Ala Lys Glu Val Ser Thr Val Thr Trp Thr Leu Cys
 275 280 285

Gly Thr Pro Asp Tyr Ile Ala Pro Glu Val Ile Thr Thr Lys Pro Tyr
 290 295 300

Asn Lys Ser Val Asp Trp Trp Ser Leu Gly Val Leu Ile Phe Glu Met
 305 310 315 320

Leu Ala Gly Tyr Thr Pro Phe Tyr Asp Ser Thr Pro Met Lys Thr Tyr
 325 330 335

Glu Lys Ile Leu Ala Gly Lys Ile His Tyr Pro Ser Phe Phe Gln Pro
 340 345 350

Asp Val Ile Asp Leu Leu Thr Lys Leu Ile Thr Ala Asp Leu Thr Arg
 355 360 365

Arg Leu Gly Asn Leu Ile Asn Gly Pro Ala Asp Ile Arg Asn His Pro
 370 375 380

Trp Phe Ser Glu Val Val Trp Glu Lys Leu Leu Ala Lys Asp Ile Glu
 385 390 395 400

Thr Pro Tyr Glu Pro Pro Ile Thr Ala Gly Val Gly Asp Ser Ser Leu
 405 410 415

Phe Asp His Tyr Pro Glu Glu Gln Leu Asp Tyr Gly Ser Gln Gly Glu
 420 425 430

Asp Pro Tyr Ala Ser Tyr Phe Leu Asp Phe
 435 440

<210> 47
 <211> 380
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 47

Met Glu Phe Val Ala Glu Arg Ala Gln Pro Val Gly Gln Thr Ile Gln
 1 5 10 15

Gln Gln Asn Val Asn Thr Tyr Gly Gln Gly Val Leu Gln Pro His His
 20 25 30

Asp Leu Gln Gln Arg Gln Gln Gln Gln Gln Arg Gln His Gln Gln
 35 40 45

Leu Leu Thr Ser Gln Leu Pro Gln Lys Ser Leu Val Ser Lys Gly Lys
 50 55 60

Tyr Thr Leu His Asp Phe Gln Ile Met Arg Thr Leu Gly Thr Gly Ser
 65 70 75 80

Phe Gly Arg Val His Leu Val Arg Ser Val His Asn Gly Arg Tyr Tyr
 85 90 95

Ala Ile Lys Val Leu Lys Lys Gln Gln Val Val Lys Met Lys Gln Val
 100 105 110

Glu His Thr Asn Asp Glu Arg Arg Met Leu Lys Leu Val Glu His Pro
 115 120 125

Phe Leu Ile Arg Met Trp Gly Thr Phe Gln Asp Ala Arg Asn Ile Phe
 130 135 140

Met Val Met Asp Tyr Ile Glu Gly Gly Glu Leu Phe Ser Leu Leu Arg
 145 150 155 160

Lys Ser Gln Arg Phe Pro Asn Pro Val Ala Lys Phe Tyr Ala Ala Glu

165										170					175				
Val	Ile	Leu	Ala	Leu	Glu	Tyr	Leu	His	Ala	His	Asn	Ile	Ile	Tyr	Arg				
			180						185					190					
Asp	Leu	Lys	Pro	Glu	Asn	Ile	Leu	Leu	Asp	Arg	Asn	Gly	His	Ile	Lys				
		195					200					205							
Ile	Thr	Asp	Phe	Gly	Phe	Ala	Lys	Glu	Val	Gln	Thr	Val	Thr	Trp	Thr				
	210					215					220								
Leu	Cys	Gly	Thr	Pro	Asp	Tyr	Ile	Ala	Pro	Glu	Val	Ile	Thr	Thr	Lys				
225					230					235					240				
Pro	Tyr	Asn	Lys	Ser	Val	Asp	Trp	Trp	Ser	Leu	Gly	Val	Leu	Ile	Tyr				
				245					250					255					
Glu	Met	Leu	Ala	Gly	Tyr	Thr	Pro	Phe	Tyr	Asp	Thr	Thr	Pro	Met	Lys				
			260					265					270						
Thr	Tyr	Glu	Lys	Ile	Leu	Gln	Gly	Lys	Val	Val	Tyr	Pro	Pro	Tyr	Phe				
		275					280					285							
His	Pro	Asp	Val	Val	Asp	Leu	Leu	Ser	Lys	Leu	Ile	Thr	Ala	Asp	Leu				
	290					295					300								
Thr	Arg	Arg	Ile	Gly	Asn	Leu	Gln	Ser	Gly	Ser	Arg	Asp	Ile	Lys	Ala				
305					310					315					320				
His	Pro	Trp	Phe	Ser	Glu	Val	Val	Trp	Glu	Arg	Leu	Leu	Ala	Lys	Asp				
				325					330					335					
Ile	Glu	Thr	Pro	Tyr	Glu	Pro	Pro	Ile	Thr	Ser	Gly	Ile	Gly	Asp	Thr				
			340					345					350						
Ser	Leu	Phe	Asp	Gln	Tyr	Pro	Glu	Glu	Gln	Leu	Asp	Tyr	Gly	Ile	Gln				
		355					360					365							
Gly	Asp	Asp	Pro	Tyr	Ala	Glu	Tyr	Phe	Gln	Asp	Phe								
	370					375					380								

<210> 48
 <211> 512
 <212> PRT

<213> Schizosaccharomyces pombe

<400> 48

Met Asp Thr Thr Ala Val Ala Ser Lys Gly Ser Thr Asn Val Gly Ser
1 5 10 15

Ser Thr Asp Thr Leu Ser Thr Ser Ala Ser Leu His Pro Ser Met Asn
20 25 30

Ala Gly Ser Val Asn Glu Tyr Ser Glu Gln Gln Arg His Gly Thr Asn
35 40 45

Ser Phe Asn Gly Lys Pro Ser Val His Asp Ser Val Gly Ser Asp Ala
50 55 60

Ser Val Ser Asn Gly His Asn Asn His Asn Glu Ser Ser Leu Trp Thr
65 70 75 80

Ser Gly Ile Pro Lys Ala Leu Glu Glu Ala Thr Lys Ser Lys Lys Pro
85 90 95

Asp Ser Leu Val Ser Thr Ser Thr Ser Gly Cys Ala Ser Ala His Ser
100 105 110

Val Gly Tyr Gln Asn Ile Asp Asn Leu Ile Pro Ser Pro Leu Pro Glu
115 120 125

Ser Ala Ser Arg Ser Ser Ser Gln Ser Ser His Gln Arg His Ser Arg
130 135 140

Asp Gly Arg Gly Glu Leu Gly Ser Glu His Gly Glu Arg Arg Ser Ala
145 150 155 160

Met Asp Gly Leu Arg Asp Arg His Ile Arg Lys Val Arg Val Ser Gln
165 170 175

Leu Leu Asp Leu Gln Arg Arg Arg Ile Arg Pro Ala Asp His Thr Thr
180 185 190

Lys Asp Arg Tyr Gly Ile Gln Asp Phe Asn Phe Leu Gln Thr Leu Gly
195 200 205

Thr Gly Ser Phe Gly Arg Val His Leu Val Gln Ser Asn His Asn Arg
210 215 220

Leu Tyr Tyr Ala Ile Lys Val Leu Glu Lys Lys Lys Ile Val Asp Met
 225 230 235 240

Lys Gln Ile Glu His Thr Cys Asp Glu Arg Tyr Ile Leu Ser Arg Val
 245 250 255

Gln His Pro Phe Ile Thr Ile Leu Trp Gly Thr Phe Gln Asp Ala Lys
 260 265 270

Asn Leu Phe Met Val Met Asp Phe Ala Glu Gly Gly Glu Leu Phe Ser
 275 280 285

Leu Leu Arg Lys Cys His Arg Phe Pro Glu Lys Val Ala Lys Phe Tyr
 290 295 300

Ala Ala Glu Val Ile Leu Ala Leu Asp Tyr Leu His His Asn Gln Ile
 305 310 315 320

Val Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Leu Asp Arg Phe Gly
 325 330 335

His Leu Lys Ile Val Asp Phe Gly Phe Ala Lys Arg Val Ser Thr Ser
 340 345 350

Asn Cys Cys Thr Leu Cys Gly Thr Pro Asp Tyr Leu Ala Pro Glu Ile
 355 360 365

Ile Ser Leu Lys Pro Tyr Asn Lys Ala Ala Asp Trp Trp Ser Leu Gly
 370 375 380

Ile Leu Ile Phe Glu Met Leu Ala Gly Tyr Pro Pro Phe Tyr Ser Glu
 385 390 395 400

Asn Pro Met Lys Leu Tyr Glu Asn Ile Leu Glu Gly Lys Val Asn Tyr
 405 410 415

Pro Ser Tyr Phe Ser Pro Ala Ser Ile Asp Leu Leu Ser His Leu Leu
 420 425 430

Gln Arg Asp Ile Thr Cys Arg Tyr Gly Asn Leu Lys Asp Gly Ser Met
 435 440 445

Asp Ile Ile Met His Pro Trp Phe Arg Asp Ile Ser Trp Asp Lys Ile
 450 455 460

Leu Thr Arg Lys Ile Glu Val Pro Tyr Val Pro Pro Ile Gln Ala Gly
 465 470 475 480

Met Gly Asp Ser Ser Gln Phe Asp Ala Tyr Ala Asp Val Ala Thr Asp
 485 490 495

Tyr Gly Thr Ser Glu Asp Pro Glu Phe Thr Ser Ile Phe Lys Asp Phe
 500 505 510

<210> 49
 <211> 70
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 49
 tttctctctt tcagggtttt tttcttcttc ttcatactat atctctatat attttataaa 60
 tctcgagatg 70

<210> 50
 <211> 125
 <212> PRT
 <213> Mucor circinelloides

<400> 50

Lys Phe Phe Leu Ala Thr Ala Pro Val Asn Trp Glu His Asn Lys Pro
 1 5 10 15

Leu Lys Arg Phe Ala Leu Pro Gly Gly Ser Ala Ala Ala Pro Gly
 20 25 30

Gly Arg Ser Pro Asn Gly Ser Gly Glu Ser Ile Ser Cys Val Leu Trp
 35 40 45

Asn Asp Leu Phe Phe Ile Thr Gly Thr Asp Ile Val Arg Ser Leu Thr
 50 55 60

Phe Arg Phe His Ala Phe Gly Arg Pro Val Thr Asn Ala Lys Lys Phe
 65 70 75 80

Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Pro Gly His Asp

	85		90		95
Ala Arg Leu Glu Glu Pro Lys Ser Glu Leu Leu Asp Met Leu Tyr Lys					
	100		105		110

Asn Asn Cys Ile Arg Thr Gln Lys Lys Gln Lys Val Phe	
	115 120 125

<210> 51
 <211> 111
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 51

Lys Phe Phe Leu Ala Thr Ala Pro Val Asn Trp Gln Glu Asn Gln Ile	
1	5 10 15

Ile Arg Arg Tyr Tyr Leu Asn Ser Gly Gln Gly Phe Val Ser Cys Val	
	20 25 30

Phe Trp Asn Asn Leu Tyr Tyr Ile Thr Gly Thr Asp Ile Val Lys Cys	
	35 40 45

Cys Leu Tyr Arg Met Gln Lys Phe Gly Arg Glu Val Val Gln Lys Lys	
	50 55 60

Lys Phe Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Cys Gly	
65	70 75 80

Ile Asp Ala Thr Leu Glu Gln Pro Lys Ser Glu Phe Leu Ser Phe Leu	
	85 90 95

Phe Arg Asn Met Cys Leu Lys Thr Gln Lys Lys Gln Lys Val Phe	
	100 105 110

<210> 52
 <211> 111
 <212> PRT
 <213> *Candida albicans*

<400> 52

Lys Phe Phe Leu Ala Thr Ala Pro Ala Asn Trp Gln Glu Asn Gln Val	
1	5 10 15

Ile Arg Arg Tyr Tyr Leu Asn His Asp Glu Gly Phe Val Ser Cys Val	
---	--

20 25 30
 Tyr Trp Asn Asn Leu Tyr Phe Ile Thr Gly Thr Asp Ile Val Arg Cys
 35 40 45
 Ile Val Tyr Lys Phe Glu His Phe Gly Arg Lys Ile Ile Asp Arg Lys
 50 55 60
 Lys Phe Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Cys Gly
 65 70 75 80
 Ala Asp Ala Ile Leu Glu Pro Pro Arg Ser Glu Phe Leu Glu Phe Leu
 85 90 95
 Phe Lys Asn Ser Cys Leu Arg Thr Gln Lys Lys Gln Lys Val Phe
 100 105 110
 <210> 53
 <211> 111
 <212> PRT
 <213> Kluyveromyces lactis
 <400> 53
 Lys Phe Phe Leu Ala Thr Arg Pro Ala Asn Trp Gln Glu Asn Gln Val
 1 5 10 15
 Ile Arg Arg Tyr Tyr Leu Ser Asn Asp Glu Gly Phe Val Ser Cys Val
 20 25 30
 Phe Trp Asn Asn Leu Tyr Tyr Ile Thr Gly Thr Asp Ile Val Arg Cys
 35 40 45
 Cys Ala Tyr Arg Met Gln Lys Phe Gly Arg Glu Ile Val Glu Arg Lys
 50 55 60
 Lys Phe Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Cys Gly
 65 70 75 80
 Ile Asp Ala Thr Leu Glu Lys Pro Lys Ser Asp Leu Leu Ala Phe Leu
 85 90 95
 Tyr Lys Asn Met Cys Leu Lys Thr Gln Lys Lys Gln Lys Val Phe
 100 105 110

<210> 54
 <211> 110
 <212> PRT
 <213> *Aspergillus nidulans*

<400> 54

Lys Tyr Phe Leu Leu Ser Ala Pro Val Asp Trp Gln Pro Asp Gln Leu
 1 5 10 15

Ile Arg Arg Phe Leu Leu Pro Thr Gly Asp Tyr Ile Ser Cys Val Leu
 20 25 30

Trp Ser Asn Leu Phe His Ile Ser Gly Thr Asp Ile Val Arg Cys Leu
 35 40 45

Ala Phe Arg Phe Gln Ala Phe Gly Arg Pro Val Lys Asn Ser Lys Lys
 50 55 60

Phe Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Ala Gly Thr
 65 70 75 80

Asp Ala Thr Leu Glu Glu Pro Lys Ser Pro Phe Leu Asp Phe Leu Tyr
 85 90 95

Lys Asn Asn Cys Ile Arg Thr Gln Lys Lys Gln Lys Val Phe
 100 105 110

<210> 55
 <211> 111
 <212> PRT
 <213> *Clavispora lusitaniae*

<400> 55

Lys Phe Phe Leu Ala Thr Ala Pro Ala Asn Trp Gln Glu Asn Gln Val
 1 5 10 15

Ile Arg Arg Tyr Tyr Leu Asn Asn Asp Glu Gly Phe Val Ser Cys Val
 20 25 30

Phe Trp Asn Asn Leu Tyr Phe Val Thr Gly Thr Asp Ile Val Arg Cys
 35 40 45

Ile Leu Tyr Lys Phe Gln His Phe Gly Arg Thr Ile Thr Asp Arg Lys
 50 55 60

Lys Phe Glu Glu Gly Ile Phe Ser Asp Leu Arg Asn Leu Lys Ala Gly
65 70 75 80

Ser Asp Ser Val Leu Glu Glu Pro Lys Ser Pro Phe Leu Glu Phe Leu
85 90 95

Tyr Asn Asn Ser Cys Leu Arg Thr Gln Lys Lys Gln Lys Val Phe
100 105 110

<210> 56
<211> 103
<212> PRT
<213> Mucor circinelloides

<400> 56

Tyr Ile Val Gln Glu Ile Met Glu Ala Asp Leu His Gln Ile Ile Arg
1 5 10 15

Ser Gly Gln Pro Leu Thr Asp Ala His Phe Gln Tyr Phe Val Tyr Gln
20 25 30

Ile Cys Arg Gly Leu Lys Tyr Ile His Ser Ala Asn Val Leu His Arg
35 40 45

Asp Leu Lys Pro Gly Lys Leu Arg Ile Asn Gly Ile Thr Gln Ile Thr
50 55 60

Glu Pro Lys Ile Cys Asp Phe Gly Leu Ala Arg Gly Tyr Ser Glu Asn
65 70 75 80

Asp Glu His Asn Val Gly Phe Met Thr Glu Tyr Val Ala Thr Arg Trp
85 90 95

Tyr Arg Ala Pro Glu Ile Met
100

<210> 57
<211> 100
<212> PRT
<213> Schizosaccharomyces pombe

<400> 57

Tyr Ile Tyr Glu Glu Leu Met Glu Ala Asp Leu Asn Ala Ile Ile Lys
1 5 10 15

Ser Gly Gln Pro Leu Thr Asp Ala His Phe Gln Ser Phe Ile Tyr Gln
20 25 30

Ile Leu Cys Gly Leu Lys Tyr Ile His Ser Ala Asn Val Ile His Arg
35 40 45

Asp Leu Lys Pro Gly Asn Leu Leu Val Asn Ala Asp Cys Glu Leu Lys
50 55 60

Ile Cys Asp Phe Gly Leu Ala Arg Gly Cys Ser Glu Asn Pro Glu Glu
65 70 75 80

Asn Pro Gly Phe Met Thr Glu Tyr Val Ala Thr Arg Trp Tyr Arg Ala
85 90 95

Pro Glu Ile Met
100

<210> 58
<211> 100
<212> PRT
<213> Candida albicans

<400> 58

Tyr Leu Tyr Glu Glu Leu Met Glu Cys Asp Met His Gln Ile Ile Arg
1 5 10 15

Ser Gly Gln Pro Leu Ser Asp Gln His Tyr Gln Ser Phe Ile Tyr Gln
20 25 30

Val Leu Cys Gly Leu Asn Phe Ile His Ser Ala Asp Val Leu His Arg
35 40 45

Asp Leu Lys Pro Gly Asn Leu Leu Val Asn Ala Asp Cys Glu Leu Lys
50 55 60

Ile Cys Asp Phe Gly Leu Ala Arg Gly Phe Ser Glu Asn Pro Asp Glu
65 70 75 80

Asn Ala Gly Phe Met Thr Glu Tyr Val Ala Thr Arg Trp Tyr Arg Ala
85 90 95

Pro Glu Ile Met
100

<210> 59
 <211> 98
 <212> PRT
 <213> *Fusarium oxysporum*

<400> 59

Tyr Leu Ile Gln Glu Leu Met Glu Thr Asp Met His Arg Val Ile Arg
 1 5 10 15

Thr Gln Asp Leu Ser Asp Asp His Cys Gln Tyr Phe Ile Tyr Gln Thr
 20 25 30

Leu Arg Ala Leu Lys Ala Met His Ser Ala Asn Val Leu His Arg Asp
 35 40 45

Leu Lys Pro Ser Asn Leu Leu Leu Asn Ala Asn Cys Asp Leu Lys Val
 50 55 60

Cys Asp Phe Gly Leu Ala Arg Ser Ala Ala Ser Gln Glu Asp Asn Ser
 65 70 75 80

Gly Phe Met Thr Glu Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu
 85 90 95

Ile Met

<210> 60
 <211> 100
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 60

Tyr Leu Tyr Glu Glu Leu Met Glu Cys Asp Met His Gln Ile Ile Lys
 1 5 10 15

Ser Gly Gln Pro Leu Thr Asp Ala His Tyr Gln Ser Phe Thr Tyr Gln
 20 25 30

Ile Leu Cys Gly Leu Lys Tyr Ile His Ser Ala Asp Val Leu His Arg
 35 40 45

Asp Leu Lys Pro Gly Asn Leu Leu Val Asn Ala Asp Cys Gln Leu Lys
 50 55 60

Ile Cys Asp Phe Gly Leu Ala Arg Gly Tyr Ser Glu Asn Pro Val Glu
65 70 75 80

Asn Ser Gln Phe Leu Thr Glu Tyr Val Ala Thr Arg Trp Tyr Arg Ala
85 90 95

Pro Glu Ile Met
100

<210> 61
<211> 98
<212> PRT
<213> Candida albicans

<400> 61

Tyr Leu Ile Gln Glu Leu Met Glu Thr Asp Leu His Arg Val Ile Arg
1 5 10 15

Thr Gln Asn Leu Ser Asp Asp His Ile Gln Tyr Phe Ile Tyr Gln Thr
20 25 30

Leu Arg Ala Leu Lys Ala Met His Ser Ala Asn Val Leu His Arg Asp
35 40 45

Leu Lys Pro Ser Asn Leu Leu Leu Asn Ser Asn Cys Asp Leu Lys Ile
50 55 60

Cys Asp Phe Gly Leu Ala Arg Ser Ile Ala Ser Gln Glu Asp Asn Tyr
65 70 75 80

Gly Phe Met Thr Glu Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu
85 90 95

Ile Met

<210> 62
<211> 14
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 <223> Xaa can be any amino acid

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 <222> (10)..(11)
 <223> Xaa can be any amino acid

<400> 62

Ile Ser Xaa Pro Xaa Xaa Phe Xaa His Xaa Xaa His Val Gly
 1 5 10

<210> 63
 <211> 16
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 <222> (12)..(13)
 <223> Xaa can be any amino acid

<400> 63

Ile	Ser	Xaa	Pro	Xaa	Xaa	Xaa	Xaa	Phe	Xaa	His	Xaa	Xaa	His	Val	Gly
1				5					10					15	

<210> 64

<211> 99

<212> PRT

<213> Artificial Sequence

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<223> Xaa can be any amino acid

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<222> (14)..(85)

<223> Xaa can be any amino acid

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<221> misc_feature

<222> (88)..(88)

<223> Xaa can be any amino acid

<220>

<221> misc_feature

<222> (90)..(98)

<223> Xaa can be any amino acid

<400> 64

Phe	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Arg	Glu	Xaa	Xaa	Xaa
1				5					10					15	

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			20					25						30		

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			35				40					45				

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			50				55					60				

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95

Xaa Xaa Xaa Arg Asp Xaa Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
100 105 110

Cys